CLAIMS

I CLAIM:

1. A modified Savonius rotor wind turbine comprising:

(a) a least one vane having at least one concave and at least one convex side; and

(b) at least one exhaust channel on each at least one vane, each of said at least one exhaust channel providing a flow path permitting air to pass through the modified Savonius rotor vane from the concave side to the convex side of each at least one vane of the modified Savonius rotor.

2. The modified Savonius rotor wind turbine of claim **1** wherein the at least one vane comprises an "S" shaped vane when viewed from an axis of rotation.

3. The modified Savonius rotor wind turbine of claim **1** wherein the exhaust channel is constructed so that air passing through the exhaust channel enters a freestream.

4. The modified Savonius rotor wind turbine of claim **1** additionally comprising circular support plates operably affixed to a top and a bottom of the modified Savonius rotor, wherein said circular support plates are symmetric about an axis of rotation.

5. The modified Savonius rotor wind turbine of claim **1** wherein the circular support plates have a diameter substantially equal to an overall length of the modified Savonius rotor vane.

6. The modified Savonius rotor wind turbine of claim **1** additionally comprising a plurality of modified Savonius rotors vertically disposed and operably fastened one to another.

7. The modified Savonius rotor wind turbine of claim **6** wherein the plurality of

modified Savonius rotors are oriented such that the modified Savonius rotors are rotated with respect to one another.

8. The modified Savonius rotor wind turbine of claim **1** additionally comprising photovoltaic cells affixed to outside surfaces of the modified Savonius rotor.

9. The modified Savonius rotor wind turbine of claim **8** additionally comprising a conical solar collector placed on top of the modified Savonius rotor with an apex of said conical solar collector facing up.

10. The modified Savonius rotor wind turbine of claim **9** wherein the conical solar collector comprises a plurality of isosceles triangle shapes of solar collector material creased from an apex to a center of a base such that a cross section of the solar collector isosceles triangle is a "V" shape; said plurality of creased solar collector isosceles triangles being arranged into the cone.

11. A method of configuring a modified Savonius rotor comprising at least one vane, each modified Savonius rotor vane having at least one concave and at least one convex side, the method comprising providing at least one exhaust channel to permit air to pass through the modified Savonius rotor vane from the concave side to the convex side.

12. The method of claim **11** additionally comprising the step of forming the at least one vane in an "S" shape when viewed from an axis of rotation.

13. The method of claim **11** additionally comprising the steps of:

(a) stacking a plurality of modified Savonius rotors one above another; and

(b) rigidly affixing the plurality of modified Savonius rotors to one another, all sharing a common axis of rotation.

14. The method of claim **11** additionally comprising covering outer surfaces of the modified Savonius rotor wind turbine with solar collector material for converting solar radiation to electrical energy.

15. The method of claim **14** additionally comprising the steps of:

(a) constructing a plurality of isosceles triangle shapes of solar collector material;

(b) creasing said plurality of solar collector isosceles triangles from apex to center of base such that a cross section of the solar collector isosceles triangle is a "V" shape;

(c) arranging said plurality of creased solar collector isosceles triangles into a cone with an apex of the cone facing upward;

(d) operably attaching said cone above a top circular support plate.